CEREAL RUST BULLETIN

Report No. 6

June 4, 1997

From:

CEREAL RUST LABORATORY
U.S. DEPARTMENT OF AGRICULTURE
UNIVERSITY OF MINNESOTA, ST. PAUL 55108

(612) 625-6299 FAX (612) 649-5054
Internet: markh@puccini.crl.umn.edu
http://www.crl.edu/
rust survey mail list: cereal-rust-survey@coafes.umn.edu

Issued by:

AGRICULTURAL RESEARCH SERVICE
U.S. DEPARTMENT OF AGRICULTURE
(In cooperation with the Minnesota Agricultural Experiment Station)

- Leaf rust is heavy on wheat in Oklahoma and southern Kansas, where significant yield losses are predicted.

The small grain harvest is underway from northern Georgia to north central Texas. Winter wheat condition is rated slightly better than last week as a result of moisture and enhanced grain filling in the central Great Plains. Last week, in most of the northern small grain growing area, dry weather allowed for excellent planting progress and seeding was ahead of last year and near the 5-year average.

Wheat stem rust. In late May, the only new reports of wheat stem rust were traces in northwestern Arkansas and central Texas varietal plots. In central Texas, the crop was near maturity and hot dry weather in Arkansas hastened maturity. If the stem rust from Arkansas moves north and east it could still cause problems in Indiana where cold spring weather delayed crop development two weeks behind normal.

Wheat leaf rust. During the third week of May, in north central Oklahoma, 60% wheat leaf rust severities were observed on the flag leaves of many of the cultivars growing in fields and plots. In north central Oklahoma varietal plots, cultivars like Karl 92, 2163 and Chisholm had 60% severity readings, while rust severities in cultivars like Custer, Jagger and 2137 were less than 5%. Rust losses to leaf rust in Oklahoma this year could be near 10%. In mid-May, 20% leaf rust severity readings were observed on *Triticum cylindricum* (goatgrass) in western Oklahoma. This was the heaviest leaf rust observed on goatgrass in the last five years.

In late May, in south central Kansas fields, 80% leaf rust severities were common on the flag leaves of susceptible winter wheat cultivars where rust overwintered. In varietal plots in south central Kansas, leaf rust had decimated most of the cultivars and the only cultivar showing some resistance was Big Dawg. Throughout northern Kansas, leaf rust development has been

slow. The cooler than normal night temperatures during the last part of May may have been one of the reasons why rust did not develop as fast as expected. Leaf rust losses in Kansas are still expected to be in the 2-5% range.

In late May, wheat leaf rust was severe in varietal plots and light in fields in the bootheel of Missouri, northeastern Arkansas and western Tennessee. In varietal plots in eastern Virginia, severities ranged from 10 to 50%.

During late May, traces of leaf rust were reported in central Michigan plots and east central fields.

Trace amounts of leaf rust were found in south central and southeastern North Dakota on June 2. This is the first report of leaf rust in North Dakota.

In late May, wheat leaf rust was light in the Skagit Valley of western Washington, but because of the recent rains rust is expected to increase.

The preliminary leaf rust race identifications for 1997 are shown in Table 1. The race identifications for Texas are from the southern part of the state where this year many new races for the area were found. Races MBNL, MBTL and MCDL were not previously identified in Texas. The main difference in these races is the *Lr*17 virulence. *Lr*17 is part of the leaf rust resistance in Jagger.

TABLE 2. Wheat leaf rust races identified through June 2, 1997

		Number of isolates by state					
Prt code	Virulence formula[1]	AL	AR	GA	LA	OK	TX
MBBL	1,3,10		1				
MBNL	1,3,3ka,10,17						4
MBRL	1,3,3ka,10,11,30	3	6		2		6
MBTL	1,3,3ka,10,11,17,30						1
MCBL	1,3,10,26						2
MCDL	1,3,10,17,26						9
MCRL	1,3,3ka,10,11,26,30						2
MDBL	1,3,10,24						6
MDGL	1,3,10,11,24						1
MDRL	1,3,3ka,10,11,24,30						5
MFBL	1,3,10,24,26		3				
MFDL	1,3,10,17,24,26						1
MFRL	1,3,3ka,10,11,24,26,30					1	
MFTL	1,3,3ka,10,11,17,24,26,30					1	
TBBL	1,2a,2c,3,10			1			2
TDBL	1,2a,2c,3,10,24		2				10
TDRL	1,2a,2c,3,3ka,10,11,24,30						2
TFCL	1,2a,2c,3,10,24,26,30			1			

TFGL	1,2a,2c,3,10,11,24,26						2
TLGG	1,2a,2c,3,9,11,18			2			
Number of isolates		3	12	4	2	2	53
Number of collections		2	6	2	1	1	30

[1] Single gene resistances evaluated: *Lr*1,2a,2c,3,3ka,9,10,11,16,17,18,24,26,30

Wheat stripe rust. In late May, traces of stripe rust were found in wheat fields in the bootheel of Missouri and western Tennessee. The hot temperatures this week probably will disrupt the development of stripe rust in this area.

In late May, 90% stripe rust severities were observed on susceptible wheat cultivars (boot to heading growth stages) in the Skagit Valley of western Washington. East of the Cascades in Washington, wheat stripe rust has not increased much the last 3 to 4 weeks primarily because of dry weather.

Oat stem rust. There have been no new reports of oat stem rust since the last bulletin.

Oat crown rust. Throughout the southern U.S., crown rust has continued to increase on oats that are not mature. Inoculum from the south is likely to have an impact on crown rust increase farther north.

In late May, aeciospores, which can infect oat, were found on buckthorn leaves in southern Minnesota and southern Wisconsin. Buckthorn bushes are the alternate host for crown rust and generally provide the initial spores for crown rust infections of the northern oat crop.

Barley stem rust. Barley stem rust was first reported, this year, on May 19 in barley plots in south Texas at Beeville. Limited amounts of barley are grown commercially in the southern states. Stem rust on barley rarely occurs in this area.

Barley leaf rust. In late May, light amounts of barley leaf rust were reported in south central Pennsylvania and in the Skagit Valley of western Washington.

Stripe rust on barley. In late May, barley stripe rust was increasing in spring barley plots at Corvallis, Oregon. Stripe rust was severe (90%) on susceptible winter cultivars in the boot to heading growth stages in the Skagit Valley of western Washington. As of late May, there have been no reports of barley stripe rust being found east of the Cascade Mountains in the Pacific Northwest.

Rye rusts. There have been no new rye rust reports since the last bulletin.

Stem rust on barberry. During mid-May, aecial development was observed on barberry bushes (alternate host for stem rust) in south central Wisconsin.

Fig. 1. Leaf rust severities in wheat fields on June 2, 1997